

**Commonwealth of Kentucky**  
**Natural Resources and Environmental Protection Cabinet**  
**Department for Environmental Protection**  
**Division for Air Quality**  
**803 Schenkel Lane**  
**Frankfort, Kentucky 40601**  
**(502) 573-3382**

**Title V**  
**AIR QUALITY PERMIT**  
**Issued under 401 KAR 52:020**

**Permittee Name:** Superior Graphite Co.

**Mailing Address:** 10 South Riverside Plaza, Suite 1600  
Chicago, Illinois 60606

**Source Name:** Superior Graphite Co.  
Desulco Division

**Mailing Address:** P.O. Box 535  
Hopkinsville, Kentucky 42240

**Source Location:** 4021 Calvin Drive  
Hopkinsville, Kentucky

**Permit Number:** V-03-040  
**Log Number:** 50261/50450  
**Review Type:** Title V, PSD  
**Source ID #:** 21-047-00025

**Regional Office:** Paducah Regional Office  
4500 Clarks River Road  
Paducah, KY 42003  
(270) 898-8468

**County:** Christian

**Application**  
**Complete Date:** October 10, 2003  
**Issuance Date:** June 10, 2004  
**Expiration Date:** June 10, 2009

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**John S. Lyons, Director**  
**Division for Air Quality**

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## **SECTION A - PERMIT AUTHORIZATION**

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and received a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

## SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### 01 (02) Raw Material Unloading Equipment

Construction Date: April, 1977

#### Description:

Calcined Petroleum Coke is unloaded into chute

#### APPLICABLE REGULATIONS:

- i. Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality applies to the particulate matter (PM/PM<sub>10</sub>) emissions from the Raw Material Unloading Equipment and supersedes the mass emission standards prescribed by 401 KAR 59:010.
- ii. Regulation 401 KAR 59:010, New Process Operations applies to the visible emissions from the Raw Material unloading equipment.

#### 1. Operating Limitations: None

#### 2. Emission Limitations:

- a. Pursuant to Regulation 401 KAR 51:017, the emissions of particulate matter shall not exceed 0.0014 lb/ton (BACT limit).
- b. Pursuant to Regulation 401 KAR 59:010, Section 3(1), the opacity of visible emissions shall not equal or exceed 20 percent.

#### Compliance Demonstration Method:

Monthly emissions shall be calculated and be kept available at plant, and shall be used to calculate the lb/ton emissions limit.

$$\begin{array}{lll} \text{Monthly Emission Rate} & = & [\text{Monthly raw material throughput rate} \times \text{Emission factor} \\ & & \text{listed in Kentucky Emissions Inventory}] \\ \text{lb/ton Emission Limit} & = & [\text{Monthly Emission Rate in lbs} / \text{Monthly Raw material} \\ \text{unloaded} & & \text{in tons}] \end{array}$$

Also, See 4. Specific Monitoring Requirements for visible emissions.

#### 3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

#### 4. Specific Monitoring Requirements:

The permittee shall monitor and maintain records of the following information:

- a. The monthly raw material throughput rate.
- b. The monthly hours of operation (hours operated per month).
- c. Once per day, during all periods of raw material unloading operation, the permittee shall survey the emission unit for visible emissions and maintain a log of observations.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

- d. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform a Method 9 reading. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification. Also see Section D.6. for compliance with opacity limits.

**5. Specific Record keeping Requirements:**

See the Specific Monitoring Requirements above.

**6. Specific Reporting Requirements:**      None

**7. Specific Control Equipment Operating Conditions:**      None

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

### **02 (01) Desulco Furnace Dry Control System**

Construction Date: April, 1977

#### Affected Facilities Vented to the Dry Control System:

##### **Furnace 16-01**

Construction Date: October 4, 1976

##### **Furnace 16-02**

Construction Date: October 4, 1976

#### **Description:**

Electric Resistance Furnaces 16-01 and 16-02

Sulfur is removed from Calcined Petroleum Coke (Raw Material) in Furnaces operating at temperatures exceeding 5000 deg F producing High Purity Carbon (Product: Desulco)

Silicon Carbide is produced by processing Desulco and Silica

Other Carbon based products are also processed

Control Equipment for PM/PM10: Baghouse; Control Efficiency: 99.6%

No Control Equipment for SO<sub>2</sub> emissions.

#### **APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 59:010, New process operations, applies to the particulate matter emissions from emission units constructed on or after July 2, 1975.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from furnaces 16-01 and 16-02.

#### **1. Operating Limitations:**

- a. The stack height for EP # 02(01) shall be at least 131.9 feet (40.2 meters).
- b. When processing the sulfur bearing materials, the raw material input, product output for graphite furnaces 16-01 and 16-02 combined, and the combined hours of operation shall not exceed 3,000 lb/hr (5,800 TPY), 2,778 lb/hr (5,000 TPY) and 3,867 hours per year respectively, while exhausting through the baghouse EP 02 (01). [Superior requested an increase in the production rate from the furnaces exhausting through the Wet Scrubber, and used the reduction in the process rate at 16-01 and 16-02 to net out of PSD review for SO<sub>2</sub>]
- c. The graphite furnaces 16-03, 16-04 and 16-05 shall not exhaust through the baghouse, emission point 02(01).
- d. Only the furnaces numbered 16-01 and 16-02 shall exhaust out the Baghouse [EP # 02(01) ].

#### **Compliance Demonstration Method:**

See the 4. Specific Monitoring and 5. Specific Record Keeping requirements below.

#### **2. Emission Limitations:**

- a. The SO<sub>2</sub> emissions exhausting from the Baghouse [EP # 02(01)] shall not exceed 162.0 lb/hr and 313.20 TPY [Voluntary limit].
- b. Pursuant to Regulation 401 KAR 59:010, Section 3.(2), emissions of particulate matter shall not exceed 4.62 lb/hr.
- c. Pursuant to Regulation 401 KAR 59:010, Section 3.(1), the opacity of visible emissions shall not equal or exceed 20 percent.

## SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

### Compliance Demonstration Method:

Particulate Emissions (lb/hr) = [ Monthly raw material usage rate x Emission factor listed in Kentucky Emissions Inventory / (Hours of operation per month)]

Monthly Emission Rate for SO<sub>2</sub> in tons = [Monthly raw material input in tons x (%S in rawmaterial/100) x 2

Where the percent S in rawmaterial is the measured average percent S minus 0.03% to account for the percent S in the product.

SO<sub>2</sub> emissions (lb/hr) = Monthly emissions (tons) x 2000 / Monthly hours of operation

SO<sub>2</sub> Emissions (tons/yr) = 12 month rolling total of monthly emissions (in tons)

Also, see the 4. Specific Monitoring requirements below.

### 3. Testing Requirements:

- a. Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.
- b. The raw material and the product shall be tested twice every shift (at the beginning of shift and half way through) for sulfur content at each furnace in operation.

### 4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Monthly combined raw material throughput and product output from furnaces 16-01 and 16-02 while exhausting through Baghouse [EP # 02(01)].
- b. Monthly combined hours of operation of furnaces 16-01 and 16-02 while exhausting through Baghouse [EP # 02(01)].
- c. Once per calendar day, the permittee shall survey the stack 02(01) and maintain a daily log noting the following information:
  - i. Whether any air emissions were visible from the stack;
  - ii. Whether the visible emissions were normal for the stack.
- d. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform a Method 9 reading. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification. Also see Section D.6. for compliance with opacity limits.
- e. For the baghouse [EP # 02(01)], the permittee shall maintain, calibrate and operate according to manufacturer's specification, a monitoring device for measurement of the differential static pressure across the baghouse. The differential static pressure shall be measured once per shift.

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

### **5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly combined raw material throughput and product output from furnaces 16-01 and 16-02 while exhausting through Baghouse [EP # 02(01)].
- b. Monthly combined hours of operation of furnaces 16-01 and 16-02 while exhausting through Baghouse [EP # 02(01)].
- c. Records of the differential static pressure across each baghouse.
- d. Records of weekly visual inspections.
- e. All maintenance activities performed at the baghouses.
- f. The twice per shift sulfur content records of raw material and the product at each furnace in operation.

### **6. Specific Reporting Requirements:**

The following information shall be reported to the Division's Paducah regional office on Quarterly basis:

- a. The monthly raw material throughput for furnaces exhausting to the baghouse.
- b. Percent sulfur in the raw material on a monthly average basis.
- c. SO<sub>2</sub> emissions from furnaces exhausting to the baghouse on monthly basis and the emissions total for past 12 months including the month of concern.
- d. The number of hours of simultaneous operation of furnaces 16-01 and 16-02 through the baghouse on a monthly basis.

### **7. Specific Control Equipment Operating Conditions:**

- a. The pressure drop across the baghouse (EP02 (01)) shall be maintained within the operating ranges established as per the manufacturer's recommendations.
- b. The afterburners shall be in operation all the times when the furnaces are in operation.



**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****03 (03) Product Handling Equipment**

Construction Date: April, 1977

**Description:**

Product is transferred to Screeners by Bucket Elevators and Screw Conveyors and then transferred to the Product Bins. The product is bagged by using the bagging equipment.

Emission Units: Screw Conveyors, Bucket Elevators, Chutes, Screener, Product Bins, Bagging Equipment

Control Equipment for PM/PM10: Baghouse; Control Efficiency: 99.6%

**APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 51:017 applies to the particulate matter (PM/PM<sub>10</sub>) emissions from the Product Handling Equipment Dust Control Systems and supersedes the mass emission standards prescribed by 401 KAR 59:010.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from the baghouse EP 03 (01).

**1. Operating Limitations:**

- a. When handling the product [Desulco] output from graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05 combined, the product output shall not exceed 67,000 tons per year.
- b. The baghouse shall control particulate emissions and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times any of the emissions units [Screw Conveyors, Bucket Elevators, Chutes, Screener, Product Bins, Bagging Equipment] listed above are in operation.

**Compliance Demonstration Method:**

- a. See the 4. Specific Monitoring and 5. Specific Record Keeping requirements below.
- b. The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the emission units listed above are in operation but the associated baghouse is not.

**2. Emission Limitations:**

- a. Mass Emission (BACT) Limit - Pursuant to Regulation 401 KAR 51:017, Section 9 (3), emissions of particulate matter (PM<sub>10</sub>) from the baghouse [EP # 03(03)] shall not exceed 0.07 lbs/hr (0.31 TPY).
- b. Opacity Limit - Pursuant to Regulation 401 KAR 59:010, Section 3 (1), the opacity of visible emissions from the baghouse [EP # 03(03)] shall not equal or exceed 20 percent.

**Compliance Demonstration Method:**

- i. Mass Emission Limit:  
$$\text{Actual Emission Rate} = \frac{[\text{Monthly Product Output as described above} \times \text{Emission factor listed in Kentucky Emission Inventory (in pounds per ton Product Output)}]}{[\text{Monthly hours of operation}]}$$

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**ii. Opacity Limit:

See 4. Specific Monitoring Requirements below.

**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

**4. Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Monthly product [Desulco] output from graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05 combined.
- b. Monthly hours of operation.
- c. Once per calendar day, the permittee shall survey the stack 03(03) and maintain a daily log noting the following information:
  - i. Whether any air emissions were visible from the stack;
  - ii. Whether the visible emissions were normal for the stack.
- d. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform a Method 9 reading. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification. Also see Section D.6. for compliance with opacity limits.
- e. For the baghouse [EP # 03(03)], the permittee shall maintain, calibrate and operate according to manufacturer's specification, a monitoring device for measurement of the differential static pressure across the baghouse. The differential static pressure shall be measured once per shift.

**5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly product [Desulco] output from graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05 combined.
- b. Monthly hours of operation.
- c. Records of the differential static pressure across each baghouse.
- d. Records of Daily visual inspections.
- e. All maintenance activities performed at the baghouses.

**6. Specific Reporting Requirements:** None**7. Specific Control Equipment Operating Conditions:**

- a. The pressure drop across the baghouse (EP03 (03)) shall be maintained within the operating ranges established as per the manufacturer's recommendations.
- b. An excursion from the operating range specified above is any shift during which the average pressure drop across the baghouse was below or above the range specified.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****04 (02) Raw Material Handling Equipment**

Construction Date: April, 1977

**Description:**

Emission Units: Screw Conveyors, Bucket Elevators, Chutes, Magnetic Belt, Crushing Tower consisting of Jaw Crushers and Smooth Roll Crushers, Raw Material Storage Bins, Surge Bins, Coke Silo, Purge Vessel, Screeners, Pre-heaters.

Raw Material is transferred to Screeners by Bucket Elevators and Screw Conveyors where the raw material is sorted by size. The oversized material is sent to the crushing tower and recycled to screeners. The specification size material is sent to surge bins and then to the furnace via the Pre-heaters and Purge Vessel.

Control Equipment for PM/PM10: Baghouse; Control Efficiency: 99.6%

**APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 51:017 applies to the particulate matter (PM/PM<sub>10</sub>) emissions from the Raw Material Handling Equipment and Dust Control Systems and supersedes the mass emission standards prescribed by 401 KAR 59:010.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from the baghouse EP 04 (02).

**1. Operating Limitations:**

- a. When handling the raw material [Calcined Petroleum Coke] to graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05, the combined raw material input shall not exceed 77,600 tons per year.
- b. The baghouse shall control particulate emissions and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times any of the emissions units [Screw Conveyors, Bucket Elevators, Chutes, Magnetic Belt, Crushing Tower consisting of Jaw Crushers and Smooth Roll Crushers, Raw Material Storage Bins, Surge Bins, Coke Silo, Purge Vessel, Screeners, Pre-heaters] listed above are in operation.

**Compliance Demonstration Method:**

- a. See the 4. Specific Monitoring and 5. Specific Record Keeping requirements below.
- b. The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the emission units listed above are in operation but the associated baghouse is not.

**2. Emission Limitations:**

- a. Mass Emission (BACT) Limit - Pursuant to Regulation 401 KAR 51:017, Section 9 (3), emissions of particulate matter (PM<sub>10</sub>) from the baghouse [EP # 04(02)] shall not exceed 0.082 lbs/hr (0.36 TPY).
- b. Opacity Limit - Pursuant to Regulation 401 KAR 59:010, Section 3 (1), the opacity of visible emissions from the baghouse [EP # 04(02)] shall not equal or exceed 20 percent.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****Compliance Demonstration Method:**

- a. Mass Emission Limit:  
Actual Emission Rate = [Monthly raw material input X  
Emission factor listed in Kentucky Emission  
inventory system (in pounds per ton rawmaterial  
input)] [Monthly hours of operation]
- b. Opacity Limit: See the Specific Monitoring requirements below.

**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

**4. Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Monthly raw material input [Calcined Petroleum Coke] into graphite furnaces 16-01,16-02, 16-03, 16-04, and 16-05 combined.
- b. Monthly hours of operation.
- c. Once per calendar day, the permittee shall survey the stack 03(03) and maintain a daily log noting the following information:
  - i. Whether any air emissions were visible from the stack;
  - ii. Whether the visible emissions were normal for the stack.
- d. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform a Method 9 reading. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification. Also see Section D.6. for compliance with opacity limits.
- e. For the baghouse [EP # 04(02)], the permittee shall maintain, calibrate and operate according to manufacturer's specification, a monitoring device for measurement of the differential static pressure across the baghouse. The differential static pressure shall be measured once per shift.

**5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly raw material input [Calcined Petroleum Coke] into graphite furnaces 16-01,16-02, 16-03, 16-04, and 16-05 combined.
- b. Monthly hours of operation.
- c. Records of the differential static pressure across each baghouse.
- d. See the monitoring requirements above.
- e. All maintenance activities performed at the baghouses.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**6. Specific Reporting Requirements:**

None

**7. Specific Control Equipment Operating Conditions:**

- a. The pressure drop across the baghouse (EP04 (02)) shall be maintained within the operating ranges established as per the manufacturer's recommendations.
- b. An excursion from the operating range specified above is any shift during which the average pressure drop across the baghouse was below or above the range specified.

## SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

### 05 (17) Desulco Furnace Wet Control System (Primary)

Construction Date: February, 1997

Affected Facilities Vented to the Desulco Furnace Wet Control System (Primary):

**Furnace 16-01**

**Furnace 16-02**

**Furnace 16-03**

Construction Date: November 5, 1979

**Furnace 16-04**

Construction Date: September 22, 1986

**Furnace 16-05**

Construction Date: June 14, 1989

### **Description:**

Controls after Furnaces with final exit from Desulco Furnace Wet Control System (Primary):

- a. Afterburner
- b. Multiclone
- c. Quench Reactor
- d. Dual Alkali Scrubber
- e. Rotary Atomizers (4)
- f. Mist Eliminator(s)
- e. Hydroclone
- f. Primary Reactor containing limeslurry to regenerate Sodium Carbonate and Sodium Hydroxide scrubbing liquor, thickener, holding tank
- g. Four 50 HP Rotary Atomizers with upstream and downstream demisters  
Permanent Pump recirculation around recirculation tank  
Control Efficiency for sulfur dioxide: 97.5%  
Control Efficiency for particulate matter (PM/PM<sub>10</sub>): Not Determined

### **APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality applies to the particulate matter (PM/PM<sub>10</sub>) emissions from the scrubber EP 05 (17) and supersedes the mass emission standards prescribed by 401 KAR 59:010.
- ii. Regulation 401 KAR 59:010, New process operations applies to the visible emissions from the scrubber EP 05 (17).
- iii. Regulation 401 KAR 59:105, New process gas streams applies to the SO<sub>2</sub> emissions from the scrubber EP 05 (17).

### **1. Operating Limitations:**

- a. While exhausting through the scrubber [EP # 05(17)], the raw material throughput [Calcined Petroleum Coke] to graphite furnaces 16-01, or 16-02, 16-03, 16-04, and 16-05 shall not exceed 4,800 lb/hr for each furnace and a combined annual throughput of 72,000 tons per year.
- b. The Multiclone, Quench Reactor, Dual Alkali Scrubber, Hydroclone, Rotary Atomizers with upstream and downstream Demisters shall control particulate emissions (PM<sub>10</sub>) and sulfur dioxide emissions and shall be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times any of the

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

emissions units [Furnaces 16-01 or 16-02, 16-03, 16-04, and 16-05] listed above are in operation, except when furnaces 16-01 and 16-02 are venting to the dry control system and none of the other furnaces are in operation. [BACT limit]

- c. When processing the sulfur bearing materials, the raw material input for graphite furnaces 16-01 and 16-02 combined, and the combined hours of operation shall not exceed 4,800 lb/hr (18,000 TPY), and 7500 hours per year respectively, while exhausting through the scrubber EP 05(17).
- d. No more than four furnaces shall be simultaneously exhausted out the wet scrubber, EP 05(17).
- e. The graphite furnaces 16-03, 16-04 and 16-05 shall not exhaust through the baghouse, emission point EP 02 (01).
- f. All the other equipment installed in the scrubber system (e.g., permanent sludge pump installed on recirculation tank, Chevron type trays) shall be properly maintained and operated as described in SOP.

**Compliance Demonstration Method:**

- a. See the 4. Specific Monitoring and 5. Specific Record Keeping requirements below.
- b. The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the emission units listed above are in operation but the associated controls [Multiclone, Quench Reactor, Dual Alkali Scrubber, Hydroclone, Rotary Atomizers with upstream and downstream Demisters] are not.
- c. The permittee shall submit within 6 months of issuance of this permit, a standard operating procedure (SOP) for particulate controls including Multiclone, Quench Reactor, Dual Alkali Scrubber, Hydroclone, and Rotary Atomizers with upstream and downstream Demisters. The SOP shall include the normal operating ranges or manufacture recommended operating ranges of all monitored parameters for each control listed in above sentence. The SOP shall list the operating procedure for rotary atomizers and how the number of atomizers is chosen to operate at one time. The SOP shall also list all other devices (e.g., permanent sludge pump installed on recirculation tank, Chevron type demisters) and the maintenance practices for these devices. After the initial compliance demonstration test is performed, the permittee shall operate all the control devices within the operating ranges established by the manufacturer's recommendations and/or the Standard Operating Procedures (SOP) that showed compliance with the standards by the performance demonstration test.
- d. The permittee also shall record on a daily basis for each of the control listed above each incidence the listed parameter (listed in SOP) is outside the normal operating ranges. An excursion from the operating range specified in SOP is any 3-hour period during which the respective parameters are below or above the range specified.

**2. Emission Limitations:**

- a. Mass Emission Limit - Pursuant to Regulation 401 KAR 51:017, Section 9 (3), emissions of particulate matter (PM<sub>10</sub>) from the scrubber stack [EP # 05(17)] shall not exceed 19.2 lb/hr and 72.0 TPY [BACT limit].
- c. Opacity Limit - Pursuant to Regulation 401 KAR 59:010, Section 3 (1), the opacity of visible emissions from the scrubber stack [EP # 05(17)] shall not equal or exceed 20

## SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

percent or the new level that is officially approved (and incorporated in to permit) by the Division/U.S. EPA in response to permittee's request for a variance under 401 KAR 50:055, Section 2(6).

- c. Mass Emission Limit - The emissions of sulfur dioxide (SO<sub>2</sub>) from the scrubber stack [EP # 05(17)] shall not exceed 27.99 lbs/hr (104.98 TPY). [Pursuant to Regulation 401 KAR 59:105, New process gas streams, the emissions of sulfur dioxide in process gas stream shall not exceed 28.63 grains per 100 dscf at zero percent oxygen. The limit of 27.99 lb/hr will meet the limit of 28.63 grains per 100 dscf at zero percent oxygen.]

### Compliance Demonstration Method:

- a. Particulate Mass Emission Limit:

Monthly particulate emissions shall be calculated to comply with the particulate emission limit in TPY.

|   |   |  |
|---|---|--|
| Monthly Emissions<br>for particulates in tons | = | [Monthly raw material input (tons) x<br>Emission factor (lb/ton) established from<br>last compliance test / 2000 lb/ton] |
|---|---|--|

|                  |   |   |
|------------------|---|---|
| Yearly Emissions | = | Sum of emissions for any twelve (12)<br>consecutive months. |
|------------------|---|---|

- b. Opacity Limit:

Daily visual inspection shall be performed and recorded at stack 05(17) using Reference Method 9.

- c. SO<sub>2</sub> Mass Emission Limit:

|   |   |  |
|---|---|--|
| Actual Emission Rate<br>for SO <sub>2</sub> | = | [Monthly raw material input x<br>(%S/100) x 2 X (1- % efficiency/100) /<br>Monthly hours of operation] |
|---|---|--|

Where the percent S in Coke is the measured average percent S minus 0.03% to account for the percent S in the product and the percent efficiency from most recent compliance test.

|                  |   |   |
|------------------|---|---|
| Yearly Emissions | = | Sum of emissions for any twelve (12)<br>consecutive months. |
|------------------|---|---|

### 3. Testing Requirements:

- a. Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.
- b. Testing shall be performed annually within 3 months of the anniversary of the permit to show compliance with the particulate (PM<sub>10</sub>)(BACT limit) and sulfur dioxide emission



**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

limits and the control efficiency of the wet scrubber for sulfur dioxide emissions. See the General Conditions, Section G(d) for initial compliance demonstration test.

**4. Specific Monitoring Requirements:**

The permittee shall monitor and record the following:

- a. The list of furnaces exhausting the scrubber at a given time.
- b. Monthly raw material input [Calcined Petroleum Coke] into graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05. For graphite furnaces 16-01 and 16-02, the raw material input shall be recorded while they are exhausting through the scrubber EP 05(17) as well as EP 02 (01).
- c. Monthly hours of operation of graphite furnaces 16-01, 16-02, 16-03, 16-04, and 16-05. For graphite furnaces 16-01 and 16-02, the hours shall be recorded while they are exhausting through the scrubber EP 05(17) as well as EP 02 (01).
- d. Daily visual inspections shall be performed by the permittee of the stack 05(17) using Reference Method 9. Records of the observations shall be kept available at the plant.
- e. The permittee shall monitor and record the following Scrubber operating parameters at least twice daily:
  1. Flow rate of make-up scrubbing liquor
  2. pH of the scrubbing liquor
  3. Recycle liquor pH
  4. Recycle liquor solids content as determined by the turbidity meter
  5. Recycle liquor flow rate into and out of the scrubber
  6. Pressure Drop across the scrubber
  7. Gas flow into the scrubber
- f. The sulfur content of the raw material used.

**5. Specific Record keeping Requirements:**

- a. See Specific Monitoring Requirements above.
- b. All maintenance activities performed on the scrubber and its components [Multiclone, Quench Reactor, Dual Alkali Scrubber, Hydroclone, and Four Rotary Atomizers with upstream and downstream Demisters] shall be recorded.

**6. Specific Reporting Requirements:**

The following information shall be reported to the Division's Paducah regional office on Quarterly basis:

- a. The monthly uncontrolled and controlled SO<sub>2</sub> and controlled particulate (PM<sub>10</sub>) emissions calculations, exhausting from the scrubber.
- b. Percent sulfur in the raw material on a monthly average basis.
- c. Total monthly raw material throughput from all furnaces exhausting to the scrubber.
- d. Report the times (based on daily observations) when the operating parameters of Multiclone, Quench Reactor, Dual Alkali Scrubber, Hydroclone, Four Rotary Atomizers and Demisters are above or below the operating range.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**7. Specific Control Equipment Operating Conditions:**

- a. The wet scrubber system shall have a minimum of 97.5% efficiency for SO<sub>2</sub> removal and shall be operated at all times. See testing requirements for compliance with this condition.
- b. The parameters listed in 4. e. Specific Monitoring requirements above for the scrubber (EP05 (17)) shall be maintained within the operating ranges established as per the manufacturer's recommendations. An excursion from the operating range specified above is any twice per shift reading where the average pressure drop across the scrubber was below or above the range specified.
- c. The afterburners shall be in operation all the times when the furnaces are in operation.
- d. See operating limitations and compliance demonstration method for the operating limitations above.

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

- 06 (07)      4.5 x 4 Ball Mill**  
Construction Date: February, 1992
- 07 (07)      6 x 5 Ball Mill**  
Construction Date: October 1992
- 08 (07)      Two 6 x 8 Ball Mills**  
Construction Date: March 1993
- 09 (07)      8 x 12 Ball Mill**  
Construction Date: January 1998

### **Description:**

- a. Milling Process
- b. Processed Silicon Carbide grain and water will be added and Ball Mills are operated for 24 hours per batch.
- c. Control Equipment for PM/PM10: None  
(Building Settling is assumed to be 50% in calculating the PM/PM10 Emissions)

### **APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 59:010, New process operations, applies to the particulate matter emissions from emission units constructed on or after July 2, 1975.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from Ball Mills listed above.

### **1. Operating Limitations:**

None

### **2. Emission Limitations:**

- a. Pursuant to Regulation 401 KAR 59:010, Section 3(2), emissions of particulate matter from each Ball Mill listed above shall not exceed 2.34 lb/hr.
- b. Pursuant to Regulation 401 KAR 59:010, Section 3(1), the opacity of visible emissions shall not equal or exceed 20 percent.

### **Compliance Demonstration Method:**

- a. Hourly particulate Emission Rate = [ Monthly raw material usage rate x Emission factor listed in Kentucky Emissions Inventory / (Hours of operation per month)]  
from each Ball Mill
- b. See the 4. Specific Monitoring requirements
- c. Visible emissions are assumed to be in compliance with 401 KAR 59:010, Section 3(1).

### **3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**4. Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Monthly raw material loading into each of the above listed Ball Mills.
- b. Monthly hours of loading into each of the Ball Mills.

**5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly combined raw material (Silicon Carbide grains) usage at each of the Ball Mills listed above.
- b. Monthly hours of loading into each of the Ball Mills.

**6. Specific Reporting Requirements:**

The monthly particulate emissions from the above listed Ball Mills shall be reported on quarterly basis to the Division's Paducah Regional Office to show non-applicability of PSD (The annual emissions on a rolling twelve (12) month period less than 15 TPY).

**7. Specific Control Equipment Operating Conditions:**

None

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**11 (08) Eight (8) 1,000 gallon Leach Tanks**

Construction Date: March 1993

**12 (08) Hydrofluoric Acid Handling, F1  
Sulfuric Acid Mixing Tank**

Construction Date: February 1992

**13 (-) Three Spent Acid Storage Tanks  
(WST-1, 2 and 3)**

Construction Date: February 1992

**Description:**

Control Equipment for Sulfuric Acid, PM10 and Hydrogen Fluoride:

Caustic Scrubber with control efficiency of 99%

### **APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 59:010, New process operations, applies to the particulate matter emissions from emission units constructed on or after July 2, 1975.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from affected facilities listed above.
- iii. Regulation 401 KAR 63:020, Potentially hazardous matter and toxic substances applies to the Sulfuric acid and Hydrogen Fluoride emissions.

### **1. Operating Limitations:**

The above listed affected facilities shall always vent through the caustic scrubber to control Hydrogen Fluoride, Sulfuric Acid, and the PM10 emissions.

### **Compliance Demonstration Method:**

- a. See the 4. Specific Monitoring and 5. Specific Record Keeping requirements below.
- b. The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the emission units listed above are in operation but the caustic scrubber is not.

### **2. Emission Limitations:**

- a. Pursuant to Regulation 401 KAR 59:010, Section 3.(2), emissions of particulate matter from each of the leaching tanks and the Sulfuric Acid mixing tank listed above shall not exceed 2.34 lb/hr.
- b. Pursuant to Regulation 401 KAR 59:010, Section 3.(1), the opacity of visible emissions from each affected facility shall not equal or exceed 20 percent.
- c. See Section D, Source Emission Limitations and Testing requirements for plantwide Sulfuric acid limits and also Hydrogen Fluoride ambient air quality modeling requirement.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****Compliance Demonstration Method:**

- a. Hourly particulate Emission Rate from each affected unit = [ Monthly H<sub>2</sub>SO<sub>4</sub> usage rate x Emission factor listed in Kentucky Emissions Inventory / (Hours of operation per month)]
- b. See the 4. Specific Monitoring requirements
- c. Visible emissions are assumed to be in compliance with 401 KAR 59:010, Section 3.(1).

**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

**4. Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Monthly H<sub>2</sub>SO<sub>4</sub> usage rate from each of the leaching tanks and the sulfuric acid mixing tank.
- b. Monthly hours of operation of leaching tanks and the sulfuric acid mixing tank.

**5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly H<sub>2</sub>SO<sub>4</sub> usage rate from each of the leaching tanks and the sulfuric acid mixing tank.
- b. Monthly hours of operation of leaching tanks and the sulfuric acid mixing tank.

**6. Specific Reporting Requirements:**

None

**7. Specific Control Equipment Operating Conditions:**

None

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**14 (09) VS1 Vibratory Screening and Packaging**

Construction Date: February 1992

**15 (09) VS2 Vibratory Screening and Packaging**

Construction Date: March 1993

**16 (09) Waste Water Treatment:**

Lime Silo

Lime Feeder

Lime Mix Tank

Construction Date: March 1993

**Description:**

Vibratory Screening and Packaging:

Control Equipment for PM10:

Baghouse with control efficiency of 99%

Lime Silo, Lime Feeder and Lime Mix Tank:

Control Equipment for PM10:

Baghouse with control efficiency of 99%

### **APPLICABLE REGULATIONS:**

- i. Regulation 401 KAR 59:010, New process operations, applies to the particulate matter emissions from emission units constructed on or after July 2, 1975.
- ii. Regulation 401 KAR 59:010 applies to the visible emissions from affected facilities listed above.

**1. Operating Limitations:**      None

**2. Emission Limitations:**

- a. Pursuant to Regulation 401 KAR 59:010, Section 3.(2), emissions of particulate matter from each affected facility listed above shall not exceed 2.34 lb/hr.
- b. Pursuant to Regulation 401 KAR 59:010, Section 3.(1), the opacity of visible emissions from each affected facility shall not equal or exceed 20 percent.

**Compliance Demonstration Method:**

- a. During normal operation of fabric filters, no compliance demonstration is necessary for mass emission standards and visible emission standards.
- b. See the 4. Specific Monitoring requirements below.

**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

## **SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

### **4. Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Monthly Silicon Carbide and Hydrated Lime usage rates
- b. Monthly hours of operation of Screeners, Lime Silo, Lime Feeder and Lime Mix Tank.
- c. If above listed emission points (EP 14, 15 and 16) are in operation during the period of malfunction of fabric filter, the permittee shall survey the exhaust fans for 14 and 15 and stack for EP 16 and maintain a log noting the following information:
  - i. Whether any air emissions were visible;
  - ii. Whether the visible emissions were normal.
- d. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform a Method 9 reading. The opacity observed shall be recorded in a logbook. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

### **5. Specific Record keeping Requirements:**

The permittee shall maintain records of the following information:

- a. Monthly Silicon Carbide and Hydrated Lime usage rates
- b. Monthly hours of operation of Screeners, Lime Silo, Lime Feeder and Lime Mix Tank.

### **6. Specific Reporting Requirements:      None**

### **7. Specific Control Equipment Operating Conditions:      None**



**SECTION C - INSIGNIFICANT ACTIVITIES**

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. While these activities are designated as insignificant the permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

DescriptionGenerally Applicable RegulationDesulco Unit:

- |                            |                |
|----------------------------|----------------|
| 1. Three Research Furnaces | 401 KAR 59:010 |
| 2. Research Calciner       | 401 KAR 59:010 |
| 3. Lime Silo               | 401 KAR 59:010 |
| 4. Back up Scrubber        | 401 KAR 59:010 |

Silicon Carbide Unit:

- |  |                |
|--|----------------|
| 1. Fourteen (14) 2,500 gallon Ball Mill Slurry Holding Tanks   | 401 KAR 59:010 |
| 2. Twelve (12) 1,000 gallon Rinse Tanks for the leached Slurry | 401 KAR 59:010 |
| 3. Eighteen (18) 500 gallon Leached Slurry Holding Tanks       | 401 KAR 59:010 |
| 4. One Electric Drying Oven in Silicon Carbide area            | 401 KAR 59:010 |
| 5. Fluid Bed Dryer   | 401 KAR 59:010 |
| 6. Calciner  | 401 KAR 59:010 |
| 7. Rotary Kiln   | 401 KAR 59:010 |
| 8. Lime Silo   | 401 KAR 59:010 |
| 9. Attrition Mills (2)   | 401 KAR 59:010 |

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
2. SO<sub>2</sub>, and PM/PM<sub>10</sub> emissions, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the respective limitations specified herein.
3. The source wide sulfuric acid emissions shall not exceed 18.8 lb/hr. The monthly sulfuric acid emissions from each sulfuric acid emitting unit shall be calculated based on engineering estimates and monthly hours of operation of sulfuric acid emitting units shall be recorded. The compliance with hourly emission limit shall be demonstrated using following method:

Monthly sulfuric acid emissions = ? (Monthly emissions from all sulfuric acid emitting units)

Hourly sulfuric acid emissions =  $\frac{\sum_{i=1}^n \text{Monthly emissions}}{\text{Monthly hours of operation}}$

Where summation (  $\sum$  ) from (i to n) represents each sulfuric acid emitting unit at the facility.

5. At no time shall the sourcewide fluoride emissions cause a violation of the gaseous fluoride standards contained in regulation 401 KAR 53:010, Ambient air quality standards. The source shall perform a one-time modeling within 6 months of the issuance of the Title V permit to demonstrate compliance with this limit. The modeling guidelines in 40 CFR 51, Appendix W shall be followed for setting up the modeling parameters and the model.
6. Alternate provisions for Opacity compliance methods in Section B of the permit (Applies only to emission points 01 through 04):
  - a. For Emission Points without observed visible emissions during twelve consecutive weeks, the owner or operator may elect to conduct a weekly one-minute visible emission survey. A log shall be maintained of the switch to weekly observations to include the date changed and the date range of the twelve consecutive week periods.
  - b. If an Emission Point is not being operated during a given week, then no visible emission survey needs to be performed and a negative declaration may be entered in the record.

## **SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS**

1. Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

## SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. Pursuant to Section 1b (IV)1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
  - a. Date, place as defined in this permit, and time of sampling or measurements;
  - b. Analyses performance dates;
  - c. Company or entity that performed analyses;
  - d. Analytical techniques or methods used;
  - e. Analyses results; and
  - f. Operating conditions during time of sampling or measurement.
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b(IV) 2 and 1a(8) of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. In accordance with the requirements of 401 KAR 52:020 Section 3(1)h the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
  - a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
  - b. To access and copy any records required by the permit;
  - c. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit, other than continuous emission or opacity monitors, shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Section 1b (V )1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

## **SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)**

6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020 Section 23. All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1 the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
  - a. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
  - b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall submit written notice upon request.
8. The owner or operator shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Section F.7. above) to the Regional Office listed on the front of this permit quarterly. Other deviations from permit requirements shall *be included in the semiannual report required by Section F.6* [Section 1b (V) 3, 4. of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
9. Pursuant to 401 KAR 52:020, Permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
  - a. Identification of the term or condition;
  - b. Compliance status of each term or condition of the permit;
  - c. Whether compliance was continuous or intermittent;
  - d. The method used for determining the compliance status for the source, currently and over the reporting period.
  - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.

## **SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)**

- f. The certification shall be postmarked by January 30th of each year. Annual compliance certifications should be mailed to the following addresses:

Division for Air Quality  
Paducah Regional Office  
4500 Clarks River Road  
Paducah, KY 42003

U.S. EPA Region IV  
Air Enforcement Branch  
Atlanta Federal Center  
61 Forsyth St.  
Atlanta, GA 30303-8960

Division for Air Quality  
Central Files  
803 Schenkel Lane  
Frankfort, KY 40601

10. In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission survey is mailed to the permittee.
11. Pursuant to Section VII (3) of the policy manual of the Division for Air Quality as referenced in 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days after the completion of the fieldwork.

**SECTION G - GENERAL PROVISIONS**(a) General Compliance Requirements

1. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020 and of the Clean Air Act and is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a, 3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020 Section 26].
2. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a, 6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
  - a. If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
  - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
  - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

4. The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or compliance with the conditions of this permit [Section 1a, 7,8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
5. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].

**SECTION G - GENERAL PROVISIONS (CONTINUED)**

6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a, 14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
7. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a, 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
8. Except for requirements identified in this permit as state-origin requirements, all terms and conditions shall be enforceable by the United States Environmental Protection Agency and citizens of the United States [Section 1a, 15 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
9. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a, 10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
10. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3)(b)].
11. This permit does not convey property rights or exclusive privileges [Section 1a, 9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
12. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3)(d)].
14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3)(a)].
15. This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.



**SECTION G - GENERAL PROVISIONS (CONTINUED)**

16. Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of issuance. Compliance with the conditions of a permit shall be considered compliance with:
  - (a) Applicable requirements that are included and specifically identified in the permit and
  - (b) Non-applicable requirements expressly identified in this permit.
- (b) Permit Expiration and Reapplication Requirements
  1. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].
  2. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020 Section 8(2)].
- (c) Permit Revisions
  1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
  2. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.
- (d) Construction, Start-Up, and Initial Compliance Demonstration Requirements

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein, emission points 01, 02, 03, 04, and 05 in accordance with the terms and conditions of this permit.

  1. Construction of any process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.

**SECTION G - GENERAL PROVISIONS (CONTINUED)**

2. Within thirty (30) days following commencement of construction and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Regional Office listed on the front of this permit in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
  - a. The date when construction commenced.
  - b. The date of start-up of the affected facilities listed in this permit.
  - c. The date when the maximum production rate specified in the permit application was achieved.
3. Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the Cabinet may extend these time periods if the source shows good cause.
4. For those affected facilities for which construction is authorized by this permit, a source shall be allowed to construct with the proposed permit. Operational or final permit approval is not granted by this permit until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055. If compliance is not demonstrated within the prescribed timeframe provided in 401 KAR 50:055, the source shall operate thereafter only for the purpose of demonstrating compliance, unless otherwise authorized by Section I of this permit or order of the Cabinet.
5. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct a performance demonstration test on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. These performance tests must also be conducted in accordance with General Provisions G(d)7 of this permit and the permittee must furnish to the Division for Air Quality's Frankfort Central Office a written report of the results of such performance test.
6. Terms and conditions in this permit established pursuant to the construction authority of 401 KAR 51:017 or 401 KAR 51:052 shall not expire.
7. Pursuant to Section VII 2.(1) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1.(1), at least one month prior to the date of the required performance test, the permittee shall complete and return a Compliance Test Protocol (Form DEP 6027) to the Division's Frankfort Central Office. Pursuant to 401 KAR 50:045, Section 5, the Division shall be notified of the actual test date at least ten (10) days prior to the test.

**SECTION G - GENERAL PROVISIONS (CONTINUED)**

8. Pursuant to Section VII 1.(2 and 3) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1.(1), if a demonstration of compliance, through performance testing was made at a production rate less than the maximum specified in the application form, then the permittee is only authorized to operate at a rate that is not greater than 110% of the rate demonstrated during performance testing. If and when the facility is capable of operation at the rate specified in the application, compliance must be demonstrated at the new production rate if required by the Division.

(e) Acid Rain Program Requirements

1. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

(f) Emergency Provisions

1. Pursuant to 401 KAR 52:020 Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
  - a. An emergency occurred and the permittee can identify the cause of the emergency;
  - b. The permitted facility was at the time being properly operated;
  - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
  - d. Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.01-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
  - e. This requirement does not relieve the source of other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
3. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].

## SECTION G - GENERAL PROVISIONS (CONTINUED)

(g) Risk Management Provisions

1. The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

**RMP Reporting Center**

P.O. Box 3346

Merrifield, VA, 22116-3346

2. If requested, submit additional relevant information to the Division or the U.S. EPA.

(h) Ozone depleting substances

1. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
  - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
  - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
  - c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
  - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166
  - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
  - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
2. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.

## **SECTION H - ALTERNATE OPERATING SCENARIOS**

None

## **SECTION I - COMPLIANCE SCHEDULE**

- a. To improve compliance with the limit of 20% opacity on the emission unit 05, Desulco Wet Control System, the permittee shall twice during the life of the permit review the latest scrubber downstream particulate/opacity controls (e. g., demisters/rotary atomizers), which are available on the market, and determine if the new products will better reduce opacity (and control particulate). The first evaluation shall be done within three months after the first anniversary of Title V permit issuance; the second during the third year of the permit. A report shall be submitted to the Permit Review Branch's for approval and to the Paducah Regional Office after each evaluation within one month of the evaluation. The report shall include any proposed changes and the timetable for making those changes. If no changes will be made, the report shall document the evaluations and findings of the evaluation. The Division reserves the right to ask for additional information.
- b. The condition a., above will be void if the permittee's variance request under 401 KAR 50:055, Section 2(6) is officially approved by the Division/U.S. EPA.